GUAM EPA
TITLE V FEDERAL OPERATING PERMIT
STATEMENT OF BASIS

U.S. Air Force
Andersen Air Force Base, SIC Code 9711

Permit No. FO-001

Facility ID:	FO-001
Facility Name:	U.S. Air Force, Andersen Air Force Base, SIC Code 9711
Mailing Address:	36th Air Base Wing, Unit 14003 APO AP, Guam 96543
Responsible Official:	Wing Commander
Title:	Commander, 36th Air Base Wing
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I. Purpose

The purpose of this engineering evaluation is to identify all applicable requirements, determine if the facility will comply with those applicable requirements, and provide the legal and factual basis for proposed permit conditions.

II. Facility Location

Andersen Air Force Base is located in Yigo, Guam.

III. Description of Facility Operations

Andersen Air Force Base provides a continuous bomber/tanker rotation and theater security presence. Activities that have the potential to cause significant emissions of air pollutants include burning of fossil fuel in boilers and emergency generators and evaporation from fuel storage and handling facilities. Of the numerous identified sources of air pollutants at

Andersen Air Force Base, five (6) boilers, 111 internal combustion engines, an air curtain incinerator, a concrete batch plant, landfill vents, a concrete crusher, a rock crusher, and 22 fuel storage tanks were identified as significant.

IV. Equipment Listing and Permitting History

IV.A. Significant Emission Units

A listing of all permitted equipment at the facility is presented in the table below. This table also includes the Guam EPA (GEPA) permit number for those emission units with existing permits.

Emission Unit Number	Description	Associated Control Equipment	Guam EPA Permit Number
B-32a	1.255 million British thermal units per hour (MMBtu/hr) diesel-fired boiler	N/A	ABU-617
B-32b	1.255 MMBtu/hr diesel-fired boiler	N/A	ABU-617
B-18017	Six wash rack heaters (0.44 MMBtu/hr each)	N/A	N/A
B-25010a	2.51 MMBtu/hr diesel-fired boiler	N/A	ABU-574
B-25010b	2.51 MMBtu/hr diesel-fired boiler	N/A	ABU-575
B-26006	1.255 MMBtu/hr diesel-fired boiler	N/A	ABU-616
EG-4-E-1	450 kilowatt (kW) portable diesel-fired emergency generator	N/A	N/A
EG-10a	1,000 kW diesel-fired emergency generator	N/A	ASG-485
EG-10b	1,000 kW diesel-fired emergency generator	N/A	ASG-485
EG-10c	1,000 kW diesel-fired emergency generator	N/A	ASG-485
EG-36	50 kW diesel-fired emergency generator	N/A	N/A
EG-70-3	60 kW diesel-fired emergency generator	N/A	N/A
EG-74	50 kW diesel-fired emergency generator	N/A	N/A
EG-79	350 kW diesel-fired emergency generator	N/A	N/A
EG-79b	300 kW diesel-fired emergency generator	N/A	N/A
EG-87	100 kW diesel-fired emergency generator	N/A	N/A
EG-683	200 kW diesel-fired emergency generator	N/A	ASG-637
EG-998	300 kW diesel-fired emergency generator	N/A	ASG-491
EG-1091	200 kW diesel-fired emergency generator	N/A	N/A
EG-1098	350 kW diesel-fired emergency generator	N/A	ASG-488
EG-1294	125 kW diesel-fired emergency generator	N/A	ASG-635
EG-1599	50 kW diesel-fired emergency generator	N/A	N/A
EG-1603	250 kW diesel-fired emergency generator	N/A	N/A
EG-1618	350 kW diesel-fired emergency generator	N/A	ASG-489
EG-1625	200 kW diesel-fired emergency generator	N/A	N/A

Emission Unit Number	Description	Associated Control Equipment	Guam EPA Permit Number
EG-1722B	35 kW diesel-fired emergency generator	N/A	N/A
EG-1780	60 kW diesel-fired emergency generator	N/A	N/A
EG-1881	350 kW diesel-fired emergency generator	N/A	ASG-490
EG-2403	35 kW diesel-fired emergency generator	N/A	N/A
EG-2510	60 kW diesel-fired emergency generator	N/A	N/A
EG-2544	35 kW diesel-fired emergency generator	N/A	N/A
EG-2589	550 kW JP-8 fuel-fired emergency generator	N/A	N/A
EG-2594	550 kW JP-8 fuel-fired emergency generator	N/A	N/A
EG-2647	400 kW diesel-fired emergency generator	N/A	ASG-632
EG-2655	35 kW diesel-fired emergency generator	N/A	N/A
EG-2750	100 kW diesel-fired emergency generator	N/A	N/A
EG-2800	60 kW diesel-fired emergency generator	N/A	ASG-507
EG-8416	35 kW diesel-fired emergency generator	N/A	N/A
EG-9003	60 kW diesel-fired emergency generator	N/A	ASG-629
EG-14509	350 kW diesel-fired emergency generator	N/A	ASG-494
EG-17000	350 kW diesel-fired emergency generator	N/A	N/A
EG-17002	350 kW diesel-fired emergency generator	N/A	ASG-511
EG-17106	650 kW diesel-fired emergency generator	N/A	N/A
EG-18001	350 kW diesel-fired emergency generator	N/A	ASG-505
EG-18002	100 kW diesel-fired emergency generator	N/A	N/A
EG-18010	750 kW diesel-fired emergency generator	N/A	ASG-502
EG-18011a	100 kW diesel-fired emergency generator	N/A	ASG-483
EG-18011b	250 kW diesel-fired emergency generator	N/A	ASG-483
EG-18013	125 kW diesel-fired emergency generator	N/A	N/A
EG-18015	100 kW diesel-fired emergency generator	N/A	N/A
EG-18017	250 kW diesel-fired emergency generator	N/A	ASG-496
EG-18020	350 kW diesel-fired emergency generator	N/A	N/A
EG-18035	60 kW diesel-fired emergency generator	N/A	N/A
EG-18042	60 kW diesel-fired emergency generator	N/A	N/A
EG-19009	250 kW diesel-fired emergency generator	N/A	N/A
EG-19010	40 kW diesel-fired emergency generator	N/A	ASG-501
EG-19016	180 kW diesel-fired emergency generator	N/A	N/A
EG-19025	550 kW JP-8 fuel-fired emergency generator	N/A	N/A
EG-19028	300 kW diesel-fired emergency generator	N/A	ASG-633
EG-19030	35 kW diesel-fired emergency generator	N/A	N/A
EG-20010a	35 kW diesel-fired emergency generator	N/A	N/A
EG-20010b	35 kW diesel-fired emergency generator	N/A	N/A
EG-20011	350 kW diesel-fired emergency generator	N/A	ASG-630

Emission Unit Number	Description	Associated Control Equipment	Guam EPA Permit Number
EG-20016	50 kW diesel-fired emergency generator	N/A	N/A
EG-21000a	100 kW diesel-fired emergency generator	N/A	N/A
EG-21000b	50 kW diesel-fired emergency generator	N/A	N/A
EG-21001	350 kW diesel-fired emergency generator	N/A	N/A
EG-21012	200 kW diesel-fired emergency generator	N/A	N/A
EG-21018	350 kW diesel-fired emergency generator	N/A	N/A
EG-21020	250 kW diesel-fired emergency generator	N/A	N/A
EG-22002	300 kW diesel-fired emergency generator	N/A	N/A
EG-22022	1,000 kW diesel-fired emergency generator	N/A	ASG-631
EG-22026a	250 kW diesel-fired emergency generator	N/A	N/A
EG-22026b	500 kW diesel-fired emergency generator	N/A	N/A
EG-23002	500 kW diesel-fired emergency generator	N/A	ASG-486
EG-23008	200 kW diesel-fired emergency generator	N/A	N/A
EG-23020	100 kW diesel-fired emergency generator	N/A	N/A
EG-23028	350 kW diesel-fired emergency generator	N/A	ASG-636
EG-25005	250 kW diesel-fired emergency generator	N/A	N/A
EG-25008	150 kW diesel-fired emergency generator	N/A	ASG-503
EG-25010	200 kW diesel-fired emergency generator	N/A	N/A
EG-25020	145 kW diesel-fired emergency generator	N/A	N/A
EG-25024	100 kW diesel-fired emergency generator	N/A	N/A
EG-25024-2	300 kW diesel-fired emergency generator	N/A	N/A
EG-25045	550 kW diesel-fired emergency generator	N/A	N/A
EG-26005	1,000 kW diesel-fired emergency generator	N/A	N/A
EG-26006	350 kW diesel-fired emergency generator	N/A	N/A
EG-26101	250 kW diesel-fired emergency generator	N/A	N/A
EG-26201	550 kW JP-8 fuel-fired emergency generator	N/A	N/A
EG-26202	35 kW diesel-fired emergency generator	N/A	ASG-513
EG-26205	500 kW JP-8 fuel-fired emergency generator	N/A	N/A
EG-27030	350 kW diesel-fired emergency generator	N/A	N/A
EG-51109	200 kW diesel-fired emergency generator	N/A	N/A
EG-Corrosion	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-Dining	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-Fire	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-FuelCell	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-GenPur	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-Hawk	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-Missile	Planned Emergency generator, 150 kW rating	N/A	N/A
EG-Mun	Planned Emergency generator, 150 kW rating	N/A	N/A

Emission Unit Number	Description	Associated Control Equipment	Guam EPA Permit Number
Tub Grinder IC	Diesel Engine, 760 HP rating	N/A	N/A
Concrete Crusher IC	Diesel Engine, 300 HP rating	N/A	N/A
Batch Plant IC	Planned Diesel Generator Set, 60 kW rating	N/A	N/A
Rock Crusher IC	Planned Diesel Engine, 272 HP rating	N/A	N/A
Air Curtain Incin IC	Planned Diesel Engine, 83 HP rating	N/A	N/A
EG-MEP-7a	100 kW portable diesel-fired emergency generator	N/A	N/A
EG-MEP-7b	100 kW portable diesel-fired emergency generator	N/A	N/A
EG-MEP-7c	100 kW portable diesel-fired emergency generator	N/A	N/A
EG-MEP-7d	100 kW portable diesel-fired emergency generator	N/A	N/A
EG-MEP-806b	60 kW portable diesel-fired emergency generator	N/A	ASG-506B
EG-MEP-806c	60 kW portable diesel-fired emergency generator	N/A	N/A
EG-MEP-9b	200 kW portable diesel-fired emergency generator	N/A	ASG-506A
EG-MEP-9c	200 kW portable diesel-fired emergency generator	N/A	ASG-506F
EG-MEP-9d	200 kW portable diesel-fired emergency generator	N/A	ASG-506D
EG-MEP-9e	200 kW portable diesel-fired emergency generator	N/A	ASG-506G
EG-MEP-9h	200 kW portable diesel-fired emergency generator	N/A	N/A
TK-2587	420,000 gallon above ground storage tank	N/A	N/A
TK-2588	420,000 gallon above ground storage tank	N/A	N/A
TK-2592	420,000 gallon above ground storage tank	N/A	N/A
TK-2593	420,000 gallon above ground storage tank	N/A	N/A
TK-14501	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14502	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14503	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14504	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14505	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14506	5,000,000 gallon above ground storage tank	N/A	AST-582
TK-14510	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A

Emission Unit Number	Description	Associated Control Equipment	Guam EPA Permit Number
TK-14513	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A
TK-14514	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A
TK-14515	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A
TK-14516	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A
TK-14517	4,000,000 gallon above ground (half-buried) storage tank	N/A	N/A
TK-19022	420,000 gallon above ground storage tank	N/A	N/A
TK-19023	420,000 gallon above ground storage tank	N/A	N/A
TK-26198	420,000 gallon above ground storage tank	N/A	N/A
TK-26199	420,000 gallon above ground storage tank	N/A	N/A
TK-26207	4,200,000 gallon above ground storage tank	N/A	N/A
TK-26208	4,200,000 gallon above ground storage tank	N/A	N/A
Landfill Vents	Vents from existing landfill at Andersen AFB	N/A	N/A
Fuel Loading	Loading JP from hydrants and loading racks	N/A	N/A
Batch Plant	Proposed concrete batch plant, 200 yd/hr (theoretical)	N/A	N/A
Air Curtain Incinerator	Air curtain incinerator used to dispose of clean wood waste	N/A	N/A

IV.B. Insignificant Emission Units

The following list of insignificant activities provided by the applicant in the permit application for this facility has been approved by GEPA. This equipment is not exempt from facility-wide requirements.

Description of Activities or Emission Units
Four (4) abrasive blasting units with potential to emit (PTE) under 2 tons per year (tpy)
One hundred thirty-three (133) storage tanks with capacities less than 40,000 gallons storing volatile organic compounds
Eight (8) paint spray booths
Eleven (11) diesel-fired standby generators with heat input capacities not exceeding 350,000 Btu/hr
Eight (8) IC engines fueled by gasoline (barrier arresting gear) with PTE under 2 tpy
Seven (7) pieces of fuel burning equipment (boilers and furnaces) with heat input capacities of

less than 1 MMBtu/hr
Three (3) fuel cell maintenance operations with PTE under 2 tpy
Fugitive emissions from valves/pumps/connectors with PTE under 2 tpy
One (1) rock quarry with PTE under 2 tpy
One (1) rock crusher with PTE under 2 tpy
One (1) concrete crusher with PTE under 2 tpy
One (1) gasoline dispensing station
Various non-point uses of paints, solvents, and adhesives with PTE under 2 tpy
One fire training facility fueled by propane and using approximately 1,800 gallons per day and 43,200 gallons per year based on 24 training days per year

V. Potential to Emit

The annual potential to emit for each significant emission unit is presented below.

Emission Unit	Potential to Emit (tons/year)						
	NO_x	VOC	SO_2	PM_{10}	CO	Lead	HAP
B-32a	7.85E-01	1.33E-02	1.12E+01	4.24E-02	1.96E-01	4.91E-05	2.39E-03
B-32b	7.85E-01	1.33E-02	1.12E+01	4.24E-02	1.96E-01	4.91E-05	2.39E-03
B-18017	1.65E+00	2.81E-02	2.35E+01	8.92E-02	4.13E-01	1.03E-04	5.03E-03
B-25010a	1.57E+00	2.67E-02	2.23E+01	8.48E-02	3.93E-01	9.82E-05	4.78E-03
B-25010b	1.57E+00	2.67E-02	2.23E+01	8.48E-02	3.93E-01	9.82E-05	4.78E-03
B-26006	7.85E-01	1.33E-02	1.12E+01	4.24E-02	1.96E-01	4.91E-05	2.39E-03
EG-4-E-1	1.02E+01	2.60E-01	6.57E+00	1.82E-01	2.70E+00	-	4.86E-03
EG-10a	2.26E+01	5.78E-01	1.46E+01	4.04E-01	5.99E+00	-	1.08E-02
EG-10b	2.26E+01	5.78E-01	1.46E+01	4.04E-01	5.99E+00	-	1.08E-02
EG-10c	2.26E+01	5.78E-01	1.46E+01	4.04E-01	5.99E+00	-	1.08E-02
EG-36	1.55E+00	1.27E-01	7.30E-01	1.09E-01	3.35E-01	-	1.34E-03
EG-70-3	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-74	1.55E+00	1.27E-01	7.30E-01	1.09E-01	3.35E-01	-	1.34E-03
EG-79	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-79b	1.55E+01	1.27E+00	7.30E+00	1.09E+00	3.35E+00	-	1.34E-02
EG-87	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-683	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-998	9.33E+00	7.62E-01	4.38E+00	6.56E-01	2.01E+00	-	8.06E-03
EG-1091	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-1098	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-1294	3.89E+00	3.17E-01	1.82E+00	2.73E-01	8.37E-01	-	3.36E-03

Emission Unit	Potential to Emit (tons/year)						
	NO_x	VOC	SO_2	PM_{10}	CO	Lead	HAP
EG-1599	1.55E+00	1.27E-01	7.30E-01	1.09E-01	3.35E-01	-	1.34E-03
EG-1603	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-1618	1.09E+01	8.89E-01	5.11E+00	7.65E-01	2.34E+00	-	9.40E-03
EG-1625	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-1722B	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-1780	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-1881	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-2403	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-2510	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-2544	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-2589	1.24E+01	3.18E-01	8.03E+00	2.22E-01	3.30E+00	-	5.95E-03
EG-2594	1.24E+01	3.18E-01	8.03E+00	2.22E-01	3.30E+00	-	5.95E-03
EG-2647	1.24E+01	1.02E+00	5.84E+00	8.74E-01	2.68E+00	-	1.07E-02
EG-2655	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-2750	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-2800	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-8416	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-9003	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-14509	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-17000	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-17002	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-17016	1.47E+01	3.75E-01	9.49E+00	2.63E-01	3.90E+00	-	7.03E-03
EG-18001	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-18002	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-18010	1.69E+01	4.33E-01	1.09E+01	3.03E-01	4.50E+00	-	8.11E-03
EG-18011a	5.18E+00	4.23E-01	2.43E+00	3.64E-01	1.12E+00	-	4.48E-03
EG-18011b	1.30E+01	1.06E+00	6.08E+00	9.11E-01	2.79E+00	-	1.12E-02
EG-18013	3.89E+00	3.17E-01	1.82E+00	2.73E-01	8.37E-01	-	3.36E-03
EG-18015	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-18017	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-18020	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-18035	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-18042	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-19009	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-19010	1.24E+00	1.02E-01	5.84E-01	8.74E-02	2.68E-01	-	1.07E-03

Emission Unit	Potential to Emit (tons/year)						
	NO_x	VOC	SO_2	PM_{10}	CO	Lead	HAP
EG-19016	5.60E+00	4.57E-01	2.63E+00	3.93E-01	1.21E+00	-	4.83E-03
EG-19025	1.24E+01	3.18E-01	8.03E+00	2.22E-01	3.30E+00	-	5.95E-03
EG-19028	9.33E+00	7.62E-01	4.38E+00	6.56E-01	2.01E+00	-	8.06E-03
EG-19030	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-20010a	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-20010b	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-20011	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-20016	1.55E+00	1.27E-01	7.30E-01	1.09E-01	3.35E-01	-	1.34E-03
EG-21000a	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-21000b	1.55E+00	1.27E-01	7.30E-01	1.09E-01	3.35E-01	-	1.34E-03
EG-21001	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-21012	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-21018	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-21020	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-22002	9.33E+00	7.62E-01	4.38E+00	6.56E-01	2.01E+00	-	8.06E-03
EG-22022	2.26E+01	5.78E-01	1.46E+01	4.04E-01	5.99E+00	-	1.08E-02
EG-22026a	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-22026b	1.13E+01	2.89E-01	7.30E+00	2.02E-01	3.00E+00	-	5.41E-03
EG-23002	1.13E+01	2.89E-01	7.30E+00	2.02E-01	3.00E+00	-	5.41E-03
EG-23008	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-23020	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-23028	1.09E+01	8.89E-01	5.11E+00	7.65E-01	2.34E+00	-	9.40E-03
EG-25005	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-25008	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-25010	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-25020	4.51E+00	3.68E-01	2.12E+00	3.17E-01	9.71E-01	-	3.89E-03
EG-25024	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-25024-2	9.33E+00	7.62E-01	4.38E+00	6.56E-01	2.01E+00	-	8.06E-03
EG-25045	1.24E+01	3.18E-01	8.03E+00	2.22E-01	3.30E+00	-	5.95E-03
EG-26005	2.26E+01	5.78E-01	1.46E+01	4.04E-01	5.99E+00	-	1.08E-02
EG-26006	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-26101	7.77E+00	6.35E-01	3.65E+00	5.47E-01	1.67E+00	-	6.71E-03
EG-26201	1.24E+01	3.18E-01	8.03E+00	2.22E-01	3.30E+00	-	5.95E-03
EG-26202	1.09E+00	8.89E-02	5.11E-01	7.65E-02	2.34E-01	-	9.40E-04
EG-26205	1.13E+01	2.89E-01	7.30E+00	2.02E-01	3.00E+00	-	5.41E-03

Emission Unit	Potential to Emit (tons/year)						
	NO_x	VOC	SO_2	PM_{10}	CO	Lead	HAP
EG-27030	7.90E+00	2.02E-01	5.11E+00	1.41E-01	2.10E+00	-	3.78E-03
EG-51109	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-Corrosion	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-Dining	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-Fire	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-FuelCell	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-GenPur	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-Hawk	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-Missile	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
EG-Mun	4.66E+00	3.81E-01	2.19E+00	3.28E-01	1.00E+00	-	4.03E-03
Tub Grinder IC	2.13E+01	5.46E-01	1.38E+01	3.82E-01	5.66E+00	-	1.02E-02
Concrete Crusher IC	1.16E+01	9.47E-01	5.44E+00	8.15E-01	2.50E+00	-	1.00E-02
Batch Plant IC	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
Rock Crusher IC	3.89E+00	3.17E-01	1.82E+00	2.73E-01	8.37E-01	-	3.36E-03
Air Curtain Incin IC	2.25E+00	1.83E-01	1.05E+00	1.58E-01	4.84E-01	-	0.00E+00
EG-MEP-7a	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-MEP-7b	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-MEP-7c	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-MEP-7d	3.11E+00	2.54E-01	1.46E+00	2.19E-01	6.70E-01	-	2.69E-03
EG-MEP-806b	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-MEP-806c	1.87E+00	1.52E-01	8.76E-01	1.31E-01	4.02E-01	-	1.61E-03
EG-MEP-9b	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-MEP-9c	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-MEP-9d	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-MEP-9e	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
EG-MEP-9h	6.22E+00	5.08E-01	2.92E+00	4.37E-01	1.34E+00	-	5.37E-03
TK-2587	-	1.32E-02	-	-	-	-	5.61E-04
TK-2588	-	1.67E-02	-	-	-	-	7.08E-04
TK-2592	-	1.18E-02	-	-	-	-	5.00E-04
TK-2593	-	1.02E-02	-	-	-	-	4.35E-04
TK-14501	-	3.01E-02	-	-	-	-	1.28E-03
TK-14502	-	3.06E-02	-	-	-	-	1.30E-03
TK-14503	-	2.32E-02	-	-	-	-	9.85E-04

Emission Unit	Potential to Emit (tons/year)						
	NO_x	VOC	SO_2	PM_{10}	CO	Lead	HAP
TK-14504	-	2.44E-02	-	-	-	-	1.03E-03
TK-14505	-	2.33E-02	-	-	-	-	9.89E-04
TK-14506	-	2.56E-02	-	-	-	-	1.09E-03
TK-14510	-	2.39E-01	-	-	-	-	1.02E-02
TK-14513	-	2.46E-01	-	-	-	-	1.04E-02
TK-14514	-	3.22E-01	-	-	-	-	1.37E-02
TK-14515	-	5.07E-01	-	-	-	-	2.15E-02
TK-14516	-	2.78E-01	-	-	-	-	1.18E-02
TK-14517	-	3.79E-01	-	-	-	-	1.61E-02
TK-19022	-	6.36E-02	-	-	-	-	2.70E-03
TK-19023	-	5.85E-02	-	-	-	-	2.49E-03
TK-26198	-	7.75E-02	-	-	-	-	3.29E-03
TK-26199	-	5.39E-02	-	-	-	-	2.29E-03
TK-26207	-	2.72E-02	-	-	-	-	1.15E-03
TK-26208	-	2.81E-02	-	-	-	-	1.19E-03
Landfill Vents	-	2.21E+00	-	-	4.92E-02	-	2.80E-01
Fuel Loading	-	1.65E+00	-	-	-	-	7.06E-02
Batch Plant	-	-	-	1.41E+01	-	1.56E-04	5.67E-03
Concrete Crusher	-	-	-	8.29E-02	-	-	0.00E+00
Rock Crusher	-	-	-	1.06E-01	-	-	0.00E+00
Air Curtain Incinerator	3.50E+01	-	8.75E-01	1.14E+00	-	-	0.00E+00
TOTAL	**8.01E+02**	**4.75E+01**	**5.25E+02**	**4.96E+01**	**1.84E+02**	**6.03E-04**	**9.93E-01**

VI. Guam Requirements

The following table lists the applicable requirements from the Guam Air Pollution Control Standards and Regulations (GAPCSR) and from the approved Guam State Implementation Plan (SIP). For rules where an applicability determination was required, a discussion is included below.

Section 1103.2	Guam Ambient Air Quality Standards
Section 1103.3	Visible Emissions
Section 1103.4	Fugitive Dust
Section 1103.7	Incineration

Section 1103.10	Sulfur Oxides from Fuel Combustion
Section 1103.11	Open Burning
Section 1103.12	Control of Odors in Ambient Air
Section 1103.13	Asbestos
Section 1104	Permit Program Regulations
SIP, Section 7.5	Particulate Emissions from Fuel Combustion

VI.A. Particulate Matter (PM) Limits for Fuel Burning Equipment

Section 7.5 of the GEPA SIP requires that for fuel burning equipment between 1 MMBtu/hr and 1,000 MMBtu/hr in size, the allowable particulate emissions shall be calculated using the following equation:

$$Y = 1.02\ X^{-0.231}$$

Where:
Y = Allowable particulate emission rate (lb/MMBtu)
X = Operating rate (MMBtu/hr)

Boilers and IC engines at Andersen AFB are fueled by #2 diesel fuel. There are no coal or heavy oil combustion sources on Base. The USEPA AP-42 PM emission factor for the boilers used at Andersen AFB is 0.014 lb/MMBtu. The USEPA AP-42 PM emission factor for diesel IC engines up to 600 HP (approximately 4 MMBtu/hr), is 0.31 lb/MMBtu. The emission factor for larger diesel IC engines is 0.1 lb/MMBtu.

The SIP allowable emission rate gradually decreases from 1.02 lb/MMBtu at 1 MMBtu/hr to 0.83 lb/MMBtu at 2.5 MMBtu/hr (largest of boilers) to 0.6 lb/MMBtu at 10 MM Btu/hr (largest of IC engines). Because the estimated emission rates for all combustion sources at Andersen AFB are well below the SIP rule limit, compliance can be deemed to be demonstrated for these sources, so long as equipment is maintained according to manufacturer recommendations.

VII. Federal Requirements

The following table lists the applicable requirements from United States Environmental Protection Agency (USEPA) regulations. For rules where an applicability determination was required, a discussion is included below.

40 CFR Part 60, Subpart A	NSPS General Provisions
40 CFR Part 60, Subpart CCCC	NSPS for Commercial and Industrial Solid Waste Incineration Units
40 CFR Part 60, Subpart IIII	NSPS for Stationary Compression Ignition Internal Combustion Engines
40 CFR Part 61, Subpart M	Asbestos
40 CFR Part 69	Special Exemptions

Amendment 5 to the Andersen AFB Title V Permit Application includes calculations of HAP potential to emit from stationary significant and insignificant emission units (existing and planned), including paint booths and fuel dispensing stations. Those PTE estimates indicate that Andersen AFB is a true minor source of HAP emissions and is, therefore, not subject to the Major Source NESHAP regulations of 40 CFR Part 63.

VII.A. New Source Performance Standards (NSPS)

There is only one NSPS that applies to equipment currently installed at this facility, and another NSPS that will apply to the Air Curtain Incinerator if it is installed. 40 CFR Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, applies to new stationary diesel engines. 40 CFR Part 60, Subpart CCCC, Standards of Performance for Commercial and Industrial Solid Waste Incineration Units, would apply to the proposed Air Curtain Incinerator.

VII.A.1 Stationary Compression Ignition Internal Combustion Engines

Stationary compression ignition (CI) internal combustion engines ordered or modified after July 11, 2005 are subject to this NSPS. According to Section 60.4215, engines used in Guam have different emission and fuel requirements than engines used elsewhere. Engines used in Guam and ordered after July 11, 2005, must comply with emission standards for new nonroad CI engines. Compliance with this requirement may be demonstrated through manufacturer representations on the engine nameplate or in literature supplied with the engine. Engines used in Guam are not required to meet the fuel requirement of Section 60.4207.

VII.A.2 Tanks

The applicability of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (40 CFR Part 60, Subpart Kb) was reviewed, and it was determined that this regulation does not apply to the tanks at this facility. NSPS Subpart Kb generally applies to liquid storage tanks with a capacity greater than or equal to 75 cubic meters (m^3) (19,815

gallons) that store volatile organic liquids, and for which construction, reconstruction, or modification was started after July 23, 1984. Twenty-one tanks at this facility (Units TK-14510, TK-14513 through TK-14517, TK-26196-S1, TK-26196-S4 through TK-26196-S7, TK-26198, TK-26199, TK-26207, TK-26208, TK-2587, TK-2588, TK-2592, TK-2593, TK-19002, and TK-19023) meet the size and construction date requirements. However, 40 CFR 110b(b) states that tanks are exempt from the NSPS if they satisfy either of the following criteria:

1. They have a capacity greater than or equal to 151 m^3 and store a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa); or
2. They have a capacity greater than or equal to 75 m^3 but less than 151 m^3 and store a liquid with a maximum true vapor pressure less than 15.0 kPa.

The facility stores only JP-8 fuel and distillate fuel oil #2, which are listed on the Air Force's Clean Air Act Compliance Guidance websites[1] as having true vapor pressures of 0.051 kPa and 0.059 kPa, respectively. These values are well below the thresholds in the criteria listed above, so the storage tanks at this facility are not subject to NSPS Subpart Kb.

VII.A.3 Air Curtain Incinerator

Applicable federal requirements for the proposed Air Curtain Incinerator are found in 40 CFR Part 60, Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001.

Air curtain incinerators that burn only wood waste, clean lumber, and yard waste up to 35 tons/day are regulated under the Other Solid Waste Incinerators rule in 40 CFR Part 60, Subpart EEEE (40 CFR 60.2970-2974). Because the air curtain incinerator at Andersen AFB would be capable of exceeding 35 tons of waste on a typical work day, Subpart EEEE would not be applicable.

40 CFR 60 Subpart Cb (Large Municipal Waste Combustion Units) and 40 CFR 60 Subpart AAAA (Small Municipal Waste Combustion Units) are not applicable because those rules exclude clean wood waste, though Subpart AAAA covers air curtain incinerators that burn only yard waste.

[1] www.afcee.brooks.af.mil/eq/air/caatoolbox/html/federal/emisest/fuel_loading.html and www.afcee.brooks.af.mil/eq/air/caatoolbox/html/federal/compdet/nsps_volstor_tbl3.html

The opacity limit in Subpart CCCC is 10 percent (6 minute average). However, 35 percent opacity (6 minute average) is allowed during startup periods that are within the first 30 minutes of operation. Subpart CCCC allows opacity to exceed these limits during malfunctions, so long as malfunctions do not exceed 3 hours. Opacity is measured via Method 9 tests at the time of initial startup and annually thereafter. Air curtain incinerators burning only wood waste, clean lumber, and yard waste, must meet these opacity limits and certain monitoring, recordkeeping, and reporting requirements specified in Sections 60.2245 through 60.2260, and must apply for and obtain a Title V operating permit.

GAPCSR Section 1103.7 "Incineration" limits PM emissions from incinerators to 0.2 lb PM per 100 lbs of refuse combusted. It is not feasible to prove compliance with this rule directly, as it is not technically feasible to conduct a source test for PM on an air curtain incinerator. However, compliance is expected from this combustion technology because the PM emission factor for air curtain incinerators in AP-42 Section 2.1 is 0.13 lb/ton (0.007 lb/100 lbs). Compliance can therefore be deemed to be demonstrated so long as the unit is operated and maintained according to manufacturer recommendations**.**

VII.B. Compliance Assurance Monitoring (CAM)

Compliance Assurance Monitoring (CAM) is intended to provide a reasonable assurance of compliance with applicable requirements for large emission units that rely on pollution control device equipment to achieve compliance. The CAM regulations can be found in 40 CFR Part 64. CAM applicability is determined on a pollutant-specific basis. According to these regulations, an emission unit that meets all of the following criteria is subject to CAM:

1. The unit is located at major source required to obtain Part 70 or 71 permit;
2. The unit is subject to an emission limitation for the applicable pollutant;
3. The unit uses a control device (as defined by 40 CFR 64.1) to achieve compliance;
4. The potential precontrolled emissions of an applicable pollutant from the unit are equal to or greater than the major source threshold for that pollutant; and
5. The unit is not otherwise exempted by the CAM regulations.

Regarding the first requirement, the CAM rule (in 40 CFR 64.1) states that "*Part 70 or 71 permit* shall have the same meaning as provided under [40 CFR 70 or 71] provided that it shall also refer to a permit issued, renewed, amended, revised, or modified under any federal permit program promulgated under Title V [of the Clean Air] Act]."

After receiving a special exemption from USEPA, GEPA has adopted an "alternate operating permit program" according to the requirements of 40 CFR 69.13. As a result, so it was not immediately clear whether this program satisfied the definition in the CAM rule. USEPA Region 9 was consulted on this matter, and made a determination that GEPA's alternate operating permit program was promulgated under Title V of the Clean Air Act, so facilities located on Guam are potentially subject to CAM.

Emissions from the diesel-fired boilers, diesel-fired emergency generators, and storage tanks at the facility are not controlled and are less than all of the major source thresholds.

Conclusion: None of the emission units at the facility are subject to CAM.

VIII. Periodic Monitoring and Recordkeeping

Requirement	Requirement Condition #	Existing Monitoring/ Recordkeeping	Monitoring/ Recordkeeping Added to Permit	Monitoring/ Recordkeeping Condition #
PM emission limit for fuel burning equipment	II.B.1.a	Quarterly combustion analysis for CO and O_2 by Base HVAC staff	Maintenance recordkeeping	II.D.6
Opacity limits for diesel-fired engines	II.B.2.a	Monthly maintenance checks	Maintenance recordkeeping	II.D.6
Preventative maintenance for fuel burning equipment	II.C.1	None	Maintenance recordkeeping	II.E.4
Fuel sulfur content limit for boilers	II.C.2	None	Fuel sulfur content recordkeeping	II.E.2 and II.E.3
Fuel sulfur content limit for JP-8 fuel-fired emergency generators	II.C.3	None	Fuel sulfur content recordkeeping	II.E.2 and II.E.3

Requirement	Requirement Condition #	Existing Monitoring/ Recordkeeping	Monitoring/ Recordkeeping Added to Permit	Monitoring/ Recordkeeping Condition #
Fuel sulfur content limit for diesel-fired emergency generators	II.C.4	None	Fuel sulfur content recordkeeping	II.E.2 and II.E.3
Suitable precautions against fugitive dust as listed in 1103.4	II.C.5 and II.C.6	None	Quarterly visible emissions survey	II.D.6
NSPS Opacity Limits for Air Curtain Incinerator	II.B.4	Startup and Annual Method 9 opacity testing. Results reported to GEPA and maintained for five years.	N/A	II.D.7, II.E.9, and II.F.7

IX. Streamlining Applicable Requirements:

Consistent with USEPA policy, overlapping or redundant requirements may be streamlined when these are incorporated in a Title V permit. Streamlining allows the permit conditions to be listed in a clear and concise manner while ensuring compliance with all applicable requirements. The following section contains a description of streamlining that has been performed in this permit.

Condition II.C.2 – Fuel Oil Sulfur Content Limitations for Boilers

The existing GEPA permits for boilers B-25010a, B-25010b, B-26006, B-32a, and B-32b state that the fuel oil used in these units shall not exceed 1.0% sulfur content (maximum) by weight at any time and in no event shall the average over the immediate past twelve month period (including the last month reading) exceed 1.0% sulfur content by weight, however, a basis for this requirement could not be found in any current GEPA regulation. GAPCSR Section 1103.10 states that no person shall burn fossil fuel containing in excess of 2.0% sulfur by weight. Since there are no

current GEPA regulations that are more stringent, the 2.0% sulfur limit was included in the permit.

Condition II.C.4 – Diesel Fuel Oil Sulfur Content Limitations for Emergency Generators

The existing GEPA permits for emergency generators EG-18015, EG-18011a, EG-18011b, EG-10a, EG-10b, EG-10c, EG-23002, EG-1098, EG-1618, EG-1881, EG-998, EG-14509, EG-19010, EG-18010, EG-25008, EG-18001, EG-MEP-9d, EG-MEP-9a, EG-MEP-9c, EG-2800, EG-17002, and EG-26202, state that the fuel oil used in these units shall not exceed 3.14% sulfur content (maximum) by weight at any time and in no event shall the average over the immediate past twelve month period (including the last month reading) exceed 2.84% sulfur content by weight. GAPCSR Section 1103.10 states that no person shall burn fossil fuel containing in excess of 2.0% sulfur by weight. Since the GAPSCR requirement is more stringent, the 2.0% sulfur limit was included in the permit.

The existing GEPA permits for emergency generators EG-9003, EG-20011, EG-22022, EG-2647, EG-19028, EG-26005, EG-1294, EG-23028, and EG-683 state that the fuel oil used in these units shall not exceed 1.0% sulfur content (maximum) by weight at any time and the average over the past twelve month period (including the last month reading) shall not exceed 1.0% sulfur content by weight, however, a basis for this requirement could not be found in any current GEPA regulation. GAPCSR Section 1103.10 states that no person shall burn fossil fuel containing in excess of 2.0% sulfur by weight. Since there are no current GEPA regulations that are more stringent, the 2.0% sulfur limit was included in the permit.

Condition II.F.3 – Petroleum Product Release Reporting Requirements

The existing GEPA permits for fuel storage tanks, TK-14501, TK-14502, TK-14503, TK-14504, TK-14505, and TK-14506 state that GEPA shall be notified immediately in case of an emergency where petroleum products are discharged into the environment and a follow-up report shall be submitted to GEPA within ten days describing the circumstances of the incident and corrective/preventive measure to be undertaken to prevent future occurrences. GAPCSR Section 1104.12(9)(N) requires a written report within five days. Since the GAPSCR standard is more stringent, the five day requirement was included in the permit.